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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,759	02/08/2001	Yuki Nakajima	040356/0354	4157
22428	7590	01/29/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			GONZALEZ, JULIO C	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/778,759

Applicant(s)

NAKAJIMA, YUKI

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 4-8, 10, 13 and 16-50 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 4-8, 10, 13, 16-18, 35 and 36 is/are allowed.
- 6) ☒ Claim(s) 19-29, 34 and 37-50 is/are rejected.
- 7) ☒ Claim(s) 30-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11/19/03 . 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Due to the amendment filed 06/27/03, claims 19-34 will be taken into consideration.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19-27 and 37-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19 and 37 disclose that the detector is configured such that the flux is concentrated on the ends of the plates; however, it is not clear how the detector is able to concentrate the flux on a particular place since the detector is use for detecting such flux. Is the detector different from the sensor?

Claims 20 and 28 disclose that the plates are configured so that the flux is concentrated on the ends of the plates. What makes the plates be able to concentrate the flux on the ends of the plates? The shape? Groove?

In order to advance prosecution in the merits, the Prior Art will be applied as best understood by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19, 21-24, 28, 29 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al (US 5,864,192) in view of Berdut (US 5,452,663).

Nagate et al discloses magnet pole position detector comprising plates 8a of the same number as the magnets 11, three magnetic sensors 16 (see figure 15). The plates been fixed to the rotor and the stator having coils (see figure 14) and a signal based on the flux of the magnetic sensor having a maxima and minima (see figure 33). Also, Nagate et al discloses that the sensor 16 is configured near the concentration of flux (see figure 28).

However, Nagate et al does not disclose explicitly having the plates being positioned along a circular path nearby a corresponding magnet.

On the other hand, Berdut discloses for the purpose of effectively increasing the magnetic forces in magnets, a plurality of magnets 162 and plates disposed on a circular path and the plates being nearby a corresponding magnet (see figure 10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a position sensor as disclosed by Nagate et al and to place magnetic plates nearby magnets along a circular path for the purpose of effectively increasing the magnetic forces in magnets as disclosed by Berdut.

5. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al and Berdut as applied to claim 19 above, and further in view of Masuzawa et al.

The combined position detector discloses all of the elements above. However, the combined position detector does not disclose that the magnets comprise a pair of magnet components that have equal polarity.

On the other hand, Masuzawa et al discloses for the purpose of changing the magnetic fluxes per magnetic pole freely without changing the position that the magnets comprise a pair of magnet components that have equal polarity (see figure 8A).

It would have been obvious to one having ordinary skill in the art to design the combined position detector as disclosed above and to include in each magnet a pair of magnets for the purpose of changing the magnetic fluxes per magnetic pole freely without changing their position as disclosed by Masuzawa et al.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagate et al and Berdut as applied to claim 19 above, and further in view of Nii et al (US 5,574,322).

The combined position detector discloses all of the elements above. However, the combined position detector does not disclose that the plates may be configured to concentrate flux on the ends of plates.

On other hand, Nii et al discloses for the purpose of preventing radial movement of the axis of rotation of the rotor that the magnetic plates 15 may be able to concentrate the magnetic flux in regions of the opposed ends of the plates 15 (column 5, lines 46-50, see figure 4).

It would have been obvious to one having ordinary skill in the art to design the combined position detector as disclosed above and to configure magnetic plates to concentrate flux on the ends for the purpose of preventing radial movement of the axis of rotation of the rotor as disclosed by Nii et al.

Allowable Subject Matter

7. Claims 2, 4-8, 10, 13, 16, 17, 18, 35 and 36 are allowed.

More specifically the prior art fails to disclose with respect to claim 16 that the plates are fixed on an end face of the rotor and end face facing in a direction along the rotation shaft.

Claims 2, 4-8, 10 and 13 are dependant on claim 16.

With respect to claims 17 and 35, the prior art fails to disclose, in combination with the rest of the limitations that the rotor has a rotor core retaining the magnets and the plates are fixed to the rotor core via an end plate made of non-magnetic material and each of the plates being fixed on outer periphery of the rotor via a non-magnetic material.

Claim 36 is dependant on claim 35.

With respect to claim 18, the prior art fails to disclose that the plates are provided in the form of a disk in which adjacent plates are separated by a radial groove formed on the disk.

8. Claims 27, 37-50 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

With respect to claim 27, the prior art fails to disclose that the plates are provided in the form of a disk in which adjacent plates are separated by at least one radial groove formed on the disk, and wherein the magnetic flux is concentrated on both sides of at least one of the at least one radial groove.

With respect to claims 37-50, such claims are dependant on claim 35.

9. Claims 30-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 30, the prior art fails to disclose that the detector is configured such that the output signal has a maximum positive value when facing the end of a plate corresponding to the north pole of a magnet.

Claims 31-33 are dependant on claim 30.

Response to Arguments

10. Applicant's arguments with respect to claims 19-29 and 34 have been fully considered but are moot in view of new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563, which will be in effect until 02/02/04. The new phone number

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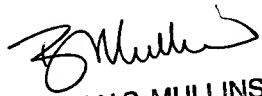
that will be in effect AFTER 02/02/04 will be (571) 272-2024. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

January 14, 2004


BURTON S. MULLINS
PRIMARY EXAMINER